RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

| Application Serial Number: | 09/301,380A |
|----------------------------|-------------|
| Source: | IFW16. |
| Date Processed by STIC: | 6/2/06 |
| | |

ENTERED

CRF Errors Edited by the STIC Systems Branch

| Serial | Number: <u>09/301, 380A</u> | CRF Edit Date: | 6/2/06 |
|----------|--|-----------------------------|------------|
| | Realigned nucleic acid/amino acid numbers/text text "wrapped" to the next line | in cases where th | e sequence |
| | Corrected the SEQ ID NO. Sequence numbers e | edited were: | |
| | Inserted or corrected a nucleic number at the en NO's edited: | d of a nucleic line | . SEQ ID |
| • | Deleted: invalid beginning/end-of-file text; | page number | s |
| | Inserted mandatory headings/numeric identifier | s, specifically: | |
| | Moved responses to same line as heading/numer | ic identifier, speci | fically: |
| <u>J</u> | Other: deleted number under stop co flquere 2 - coneutred arrivo a | den-Seques eid hunbering | u 1 |

Revised 09/09/2003



IFW16

RAW SEQUENCE LISTINGPATENT APPLICATION: **US/09/301,380A**DATE: 06/02/2006

TIME: 09:38:41

Input Set : A:\PTO.txt

```
3 <110> APPLICANT: Murphy, Gerald P.
              Boynton, Alton L.
              Sehgal, Anil
      7 <120> TITLE OF INVENTION: Nr-CAM GENE, NUCLEIC ACIDS AND NUCLEIC ACID PRODUCTS
              FOR THERAPEUTIC AND DIAGNOSTIC USES FOR TUMORS
     10 <130> FILE REFERENCE: 20093A-002100US
     12 <140> CURRENT APPLICATION NUMBER: 09/301,380A
C--> 13 <141> CURRENT FILING DATE: 2001-06-15
     15 <150> PRIOR APPLICATION NUMBER: 60/112,098
     16 <151> PRIOR FILING DATE: 1998-12-14
     18 <150> PRIOR APPLICATION NUMBER: 60/083,152
     19 <151> PRIOR FILING DATE: 1998-04-27
     21 <160> NUMBER OF SEQ ID NOS: 33
     23 <170> SOFTWARE: PatentIn Ver. 2.0
     25 <210> SEQ ID NO: 1
     26 <211> LENGTH: 4134
     27 <212> TYPE: DNA
     28 <213> ORGANISM: Homo sapiens
     30 <220> FEATURE:
     31 <221> NAME/KEY: CDS
     32 <222> LOCATION: (130)..(4029)
     34 <400> SEQUENCE: 1
     35 cttcaaagtt ccccgcatga aaattactta aacgttgcac acaacgtttc agaaaatctt 60
     37 ttgtgaaaga agaaaaggaa attcagtgtg tgagtctcag caggagttaa gctaatgcag 120
     39 cttaaaata atg ccg aaa aag aag cgc tta tct gcg ggc aga gtg ccc ctg 171
     40
                  Met Pro Lys Lys Lys Arg Leu Ser Ala Gly Arg Val Pro Leu
     41
                                    5
     43 att ctc ttc ctg tgc cag atg att agt gca ctg gaa gta cct ctt gat
     44 Ile Leu Phe Leu Cys Gln Met Ile Ser Ala Leu Glu Val Pro Leu Asp
     45 15
                             20
                                                  25
     47 cca aaa ctt ctt gaa gac ttg gta cag cct cca acc atc acc caa cag
                                                                           267
     48 Pro Lys Leu Leu Glu Asp Leu Val Gln Pro Pro Thr Ile Thr Gln Gln
     49
                         35
                                             40
     51 tct cca aaa gat tac att att gac cct cgg gag aat att gta atc cag
                                                                           315
     52 Ser Pro Lys Asp Tyr Ile Ile Asp Pro Arg Glu Asn Ile Val Ile Gln
                     50
                                         55
     55 tgt gaa gee aaa ggg aaa eeg eee eea age ttt tee tgg aee egt aat
                                                                           363
     56 Cys Glu Ala Lys Gly Lys Pro Pro Pro Ser Phe Ser Trp Thr Arg Asn
                 65
                                     70
    59 ggg act cat ttt gac atc gat aaa gac cct ctg gtc acc atg aag cct
                                                                           411
     60 Gly Thr His Phe Asp Ile Asp Lys Asp Pro Leu Val Thr Met Lys Pro
                                 85
     63 ggc aca gga acg ctc ata att aac atc atg agc gaa ggg aaa gct gag
                                                                           459
```

RAW SEQUENCE LISTING DATE: 06/02/2006
PATENT APPLICATION: US/09/301,380A TIME: 09:38:41

Input Set : A:\PTO.txt

| | ~1 | m1 | ~ 1 | m1 | T | 71 - | T1 - | 7 | - 1 - | . | 0 | ~ 1 | ~ 1 | T | 3 1 - | a 1 | |
|---|---|---|--|---|--|--|---|---|--|--|--|---|---|--|---|---|------------------------------------|
| | _ | Tnr | GIY | Thr | Leu | | iie . | Asn | тте | met | | GIU | GIA | гаг | Ата | | |
| 65 | 95 | | | | | 100 | | | | | 105 | | | | | 110 | 507 |
| | | | | gga | | | | | | | | | | | | | 507 |
| | Thr | Tyr | GIU | Gly | | Tyr | GIN | Cys | Thr | | Arg | Asn | GIU | arg | _ | Ala | |
| 69 | | | | | 115 | | | | | 120 | | | | | 125 | | |
| | - | - | | aat | | | - | - | - | | | _ | | | _ | | 555 |
| | Ala | vaı | Ser | Asn | Asn | тте | Val | Val | _ | Pro | Ser | Arg | Ser | | Leu | Trp | |
| 73 | | | | 130 | | | | | 135 | | | | | 140 | | | |
| | | | _ | aaa | | - | | | | | | - | | - | | | 603 |
| | Thr | Lys | | Lys | Leu | Glu | | | Thr | Leu | Gln | Ser | _ | Gln | Ser | Leu | |
| 77 | | | 145 | | | | | 150 | | | | | 155 | | | | |
| | | | | tgc | | | | | | | | | | | | | 651 |
| 80 | Val | | Pro | Cys | Arg | Pro | | Ile | Gly | Leu | Pro | | Pro | Ile | Ile | Phe | |
| 81 | | 160 | | | | | 165 | | | | | 170 | | | | | |
| | | _ | _ | aat | | | | - | | | | _ | | _ | _ | | 699 |
| 84 | Trp | Met | Asp | Asn | Ser | Phe | Gln | Arg | Leu | Pro | Gln | Ser | Glu | Arg | Val | Ser | |
| 85 | 175 | | | | | 180 | | | | | 185 | | | | | 190 | |
| 87 | caa | ggt | ttg | aat | ggg | gac | ctt | tat | ttt | tcc | aat | gtc | ctc | cca | gag | gac | 747 |
| 88 | Gln | Gly | Leu | Asn | Gly | Asp | Leu | Tyr | Phe | Ser | Asn | Val | Leu | Pro | Glu | Asp | |
| 89 | | | | | 195 | | | | | 200 | | | | | 205 | | |
| 91 | acc | cgc | gaa | gac | tat | atc | tgt | tat | gct | aga | ttt | aat | cat | act | caa | acc | 795 |
| 92 | Thr | Arg | Glu | Asp | Tyr | Ile | Cys | Tyr | Ala | Arg | Phe | Asn | His | Thr | Gln | Thr | |
| 93 | | | | 210 | | | | | 215 | | | | | 220 | | | |
| 95 | ata | cag | cag | aag | caa | cct | att | tct | gtg | aag | gtg | att | tca | gtg | gat | gaa | 843 |
| 96 | Ile | Gln | Gln | Lys | Gln | Pro | Ile | Ser | Val | Lys | Val | Ile | Ser | Val | Asp | Glu | |
| 97 | | | | | | | | | | | | | | | | | |
| 21 | | | 225 | | | | | 230 | | | | | 235 | | | | |
| | ttg | aat | | act | ata | gct | | | ttg | agt | gac | act | | ttt | tat | ggt | 891 |
| 99 | - | | gac | | | _ | gct | aat | _ | _ | _ | | gag | | | ggt r Gly | 891 |
| 99 |) Lei | | gac Asp | | | _ | gct | aat Asn | _ | _ | _ | | gag Glu | | | | 891 |
| 99 10 10 | Lei L | 240 | gac n Asp | Thr | Ile | Ala | gct Ala 245 | aat Asn | Leu | Ser | Asp | 250 | gag Glu | Phe | ту: | | 891 939 |
| 99 100 100 100 | Lei L G gct | Asr 240 aaa | gac Asp () () | Thr agt | Ile aga | Ala | gct Ala 245 agg | aat Asn cca | Leu | Ser aca | Asp | Thr 250 | gag Glu () a act | Phe cca | Ty: | rGly | |
| 99 100 100 100 | Lei L G gct | Asr 240 aaa Lys | gac Asp () () | Thr agt | Ile aga | Ala | gct Ala 245 agg Arg | aat Asn cca | Leu | Ser aca | Asp | Thr 250 tta Lev | gag Glu () a act | Phe cca | Ty: | r Gly | |
| 99 100 100 100 100 | D Lei L B gct Ala 5 255 | Asr 240 aaa Lys | gac n Asp) n tca s Ser | Thr agt Ser | aga Arg | gag Glu 260 | gct Ala 245 agg Arg | aat Asn cca Pro | cca Pro | Ser aca Thr | ttt Phe | Thr 250 tta Leu | gag Glu a act | cca Pro | gaa Gli | r Gly a ggc u Gly 270 | |
| 99 100 100 100 100 100 100 | D Let 1 3 gct 1 Ala 5 255 7 aat | Asr 240 aaa Lys gca | gac n Asp n tca s Ser | Thr agt Ser | aga Arg | gag Glu 260 gag | gct Ala 245 agg Arg | aat Asn cca Pro | cca Pro | Ser aca Thr | Asp ttt Phe 265 | Thr 250 tta Leu gtg | gag Glu a act Thr | Phe CCa Pro | a gaa o Glo | a ggc a Gly 270 g gag | 939 |
| 99 100 100 100 100 100 100 | D Leu L B gct A Ala 5 255 7 aat 3 Asr | Asr 240 aaa Lys gca | gac n Asp n tca s Ser | Thr agt Ser | aga Arg | gag Glu 260 gag Glu | gct Ala 245 agg Arg | aat Asn cca Pro | cca Pro | Ser aca Thr | ttt Phe 265 aat | Thr 250 tta Leu gtg | gag Glu a act Thr | Phe CCa Pro | a gaa o Glo | a ggc a Gly 270 g gag a Glu | 939 |
| 99 100 100 100 100 100 100 100 | D Let 1 3 gct 1 Ala 5 255 7 aat 3 Asr | Asr 240 aaa Lys gca Ala | gac n Asr) n tca s Ser n agt | Thr agt Ser aac | aga Arg aaa Lys 275 | gag Glu 260 gag Glu | gct Ala 245 agg Arg Glu | aat Asn cca Pro tta Leu | cca Pro aga Arg | Ser aca Thr gga Gly 280 | ttt Phe 265 aat Asr | Thr 250 tta Let gtg | gag Glu) a act Thr ctt | CCa Pro | Ty: a gaa b Gli a ctq c Lei 28! | a ggc u Gly 270 g gag u Glu | 939 |
| 99 100 100 100 100 100 100 100 110 | D Let B gct Ala 5 255 7 aat B Asr B tgc | Asr 240 aaa Lys gca Ala | gac n Asr n tca s Ser n agt n Ser | Thr agt Ser aac Asn | aga Arg aaaa Lys 275 | gag Glu 260 gag Glu | gct Ala 245 agg Arg Glu cct | aat Asn cca Pro tta Leu acc | cca Pro aga Arg | Ser aca Thr gga Gly 280 | ttt Phe 265 aat Asr | Thr 250 tta Lev gto Val | gag Glu A act Thr Ctt Leu Ctgg | Phe CCa Pro tca Sei | a gaa o Gli a cto Leo 28! | r Gly a ggc u Gly 270 g gag u Glu 5 g gaa | 939 987 |
| 99 100 100 100 100 100 100 100 110 | D Lei L B gct Ala 5 255 7 aat B Asr D L tgc 2 Cys | Asr 240 aaa Lys gca Ala | gac n Asr n tca s Ser n agt n Ser | Thr agt Ser aac Asn | aga Arg aaa Lys 275 | gag Glu 260 gag Glu | gct Ala 245 agg Arg Glu cct | aat Asn cca Pro tta Leu acc | cca Pro aga Arg | Ser aca Thr gga Gly 280 att | ttt Phe 265 aat Asr | Thr 250 tta Lev gto Val | gag Glu A act Thr Ctt Leu Ctgg | Phe CCa Pro tca Sei | a gaa b Gli a cto Lei 28! a aag | a ggc u Gly 270 g gag u Glu | 939 987 |
| 99 100 100 100 100 100 100 110 111 111 | D Let L B gct A Ala 5 255 7 aat B Asr C Cys B | Asr 240 aaa Lys gca Ala att | gac n Asp n Asp n tca s Ser n agt n Ser c gca | Thr agt Ser aac Asn gaa Glu 290 | aga Arg aaaa Lys 275 gga Gly | gag Glu 260 gag Glu ctg | gct Ala 245 Agg Arg Glu cct Pro | aat Asn cca Pro tta Leu acc | cca Pro aga Arg cca Pro 295 | Ser aca Thr gga Gly 280 att | ttt Phe 265 aat Asr | Thr 250 tta Lev gto Val | gag r Glu) a act r Thr g ctt . Leu c tgg | Phe cca Pro tca Sen gca Ala 300 | a gaa b Gli a cto Lei 28! a aao | r Gly a ggc u Gly 270 g gag u Glu 5 g gaa s Glu | 939 987 1035 |
| 99 100 100 100 100 100 110 111 111 111 | D Let B gct Ala 5 255 7 aat B Asr C Cys B gat | Asr 240 aaa Lys gca Ala att | gac n Asp n Asp n tca s Ser n agt n Ser c gca c Ala | Thr agt Ser aac Asn gaa Glu 290 cta | aga Arg aaa Lys 275 gga Gly | gag Glu 260 gag Glu ctg Leu | gct Ala 245 Agg Arg Glu Cct Pro | aat Asn cca Pro tta Leu acc Thr | cca Pro aga Arg cca Pro 295 aca | Ser aca Thr gga Gly 280 att | Asp ttt Phe 265 aat Asr att | Thr 250 tta Lev gtg Val tac Tyr | gag Glu a act Thr ctt Leu ctgg Trp | Phe CCa Pro tca Sen Sen 300 ttt | a gaa b Glu a cte 28! a aag a Ly: | a ggc u Gly 270 g gag u Glu 5 g gaa s Glu | 939 987 |
| 99 100 100 100 100 100 110 111 111 111 1 | D Let 1 3 gct 3 gct 4 Ala 5 255 7 aat 3 Asr 9 1 tgc 2 Cys 8 8 9 9 1 tgc 2 Sgat 5 gat 6 Asr | Asr 240 aaa Lys gca Ala att | gac n Asp n Asp n tca s Ser n agt n Ser c gca c Ala n ato n Met | Thr agt Ser aac Asn gaa Glu 290 cta | aga Arg aaa Lys 275 gga Gly | gag Glu 260 gag Glu ctg Leu | gct Ala 245 Agg Arg Glu Cct Pro | aat Asn cca Pro tta Leu acc Thr agg | cca Arg cca Pro 295 aca Thr | Ser aca Thr gga Gly 280 att | Asp ttt Phe 265 aat Asr att | Thr 250 tta Lev gtg Val tac Tyr | gag Glu a act Thr ctt Leu ctgg Trp gaac | Phe CCa Pro tca Sen Sen Ala 300 ttt | a gaa b Glu a cte 28! a aag a Ly: | r Gly a ggc u Gly 270 g gag u Glu 5 g gaa s Glu | 939 987 1035 |
| 999 100 100 100 100 100 100 111 111 111 | D Let 1 3 gct 4 Ala 5 255 7 aat 3 Asr 9 1 tgc 2 Cys 8 8 9 gat 6 Asr | Asr 240 aaaa Lys gca Ala att s Ile | gac n Asp n Asp n tca s Ser n agt n Ser c gca c Ala n atc n Met 305 | Thr agt Ser aac Asn gaa Glu 290 cta Leu | aga Arg aaaa Lys 275 gga Gly | gag Glu 260 gag Glu ctg Leu | gct Ala 245 Agg Arg Glu Cct Pro Asn | aat Asn cca Pro tta Leu acc Thr agg Arg 310 | cca Pro aga Arg cca Pro 295 aca | Ser aca Thr gga Gly 280 att Ile | Asp ttt Phe 265 aat Asr att Ile | Thr 250 tta Lev gtg Val tac Tyr | gag Glu A act Thr Ctt Leu Ctgg Trp Gaac Asr 315 | Phe CCa Pro tca Sen Sen Ala 300 ttt | a gaa o Gli a cto 28: a aao a Ly: o gao | a ggc u Gly 270 g gag u Glu 5 g gaa s Glu g aaa u Lys | 939 987 1035 1083 |
| 999 100 100 100 100 100 100 110 111 111 | D Let 1 got 3 got 4 Ala 5 255 7 aat 3 Asr 9 tgo 2 Cys 8 gat 6 Asr 7 acc | Asr 240 aaaa Lys gca Ala att s Ile | gac n Asp n Asp n tcas s Ser n agt n Ser n agt n Asp n Gac n agt n Gac n | Thrace agt age | aga Arg aaaa Lys 275 gga Gly | gag Glu 260 gag Glu ctg Leu aaaa Lys | gct Ala 245 Agg Arg Glu Cct Pro Asn | aat Asn cca Pro tta Leu acc Thr agg Arg 310 tca | cca Pro aga Arg cca Pro 295 aca Thr | Ser aca Thr gga Gly 280 att Ile | Asp ttt Phe 265 aat Asr att Ile tat Tyr | Thr 250 tta Lev Grant Val tac Tyr aac Lys | gag Glu A act Thr Ctt Lev Ctgg Trp Gaac SAsr 315 | tca Sen Sen 300 ttta Phe | a gaa o Gli a cto 28: a aao a Ly: c gao e Gli | a ggc a ggc u Gly 270 g gag u Glu 5 g gaa s Glu g aaa u Lys | 939 987 1035 |
| 999 100 100 100 100 100 100 110 110 110 | D Let 1 get 3 get 4 Ala 5 255 7 aat 3 Asr 6 L tgo 2 Cys 8 gat 6 Asr 7 acc 9 acc | Asr 240 aaaa Lys gca Ala att s Ile | gac n Asp n Asp n tcas s Ser n agt n Ser n agt n Ser n gca n ato g cag n Glr | Thrace agt age | aga Arg aaaa Lys 275 gga Gly | gag Glu 260 gag Glu ctg Leu aaaa Lys | gct Ala 245 Agg Arg Glu Cct Pro Asn gtt Val | aat Asn cca Pro tta Leu acc Thr agg Arg 310 tca Ser | cca Pro aga Arg cca Pro 295 aca Thr | Ser aca Thr gga Gly 280 att Ile | Asp ttt Phe 265 aat Asr att Ile tat Tyr | Thr 250 tta Lev Grant Vall tac Tyr Lys tct Ser | gag Glu A act Thr Ctt Lev Ctgg Trp Gac Asn 315 Gg Gly | tca Sen Sen 300 ttta Phe | a gaa o Gli a cto 28: a aao a Ly: c gao e Gli | a ggc u Gly 270 g gag u Glu 5 g gaa s Glu g aaa u Lys | 939 987 1035 1083 |
| 999 100 100 100 100 100 100 111 112 112 112 | D Let 1 get 3 get 4 Ala 5 255 7 aat 3 Asr 6 Cys 8 gat 6 Asr 7 acc | Asr 240 aaaa Lys Gan Ala att Ile Gga Gly | gac n Asp n Asp n tca s Ser n agt n Ser n agt n Gla n Gla n | Thrace agt services ago age ago age ago | aga Arg aaaa Lys 275 gga Gly ccc Pro | Ala gag Glu 260 gag Glu ctg Leu aaa Lys | gct Ala 245 agg Arg Glu cct Pro acc Asn gtt Val 325 | aat Asn cca Pro tta Leu acc Thr agg Arg 310 tca Ser | cca Pro aga Arg cca Pro 295 aca Thr | Ser aca Thr gga Gly 280 att Ile gtt Val | Asp ttt Phe 265 aat Asr att Ile tat Tyr | Thr 250 tta Lev Grant Val tac Tyr Lys tct Ser 330 | gag Glu A act Thr Ctt Lev Ctg Asr 315 Gga Gly | tca tca Sen Sen 300 ttt Phe | a gaa o Gli a cto Lei 28! a aaga Ly:) c gag c Gli t tao | a ggc a ggc u Gly 270 g gag u Glu 5 g gaa s Glu g aaa u Lys c caa r Gln | 939 987 1035 1083 |
| 999 100 100 100 100 100 100 111 111 111 | D Let 1 get 3 get 4 Ala 5 255 7 aat 3 Asr 6 Cys 8 gat 6 Asr 7 acc 7 acc 7 acc 8 tgt | Asr 240 aaaa Lys Gar Ala att Ile Ggar Y Leu 320 ata | gac n Asp n Asp n tca s Ser n agt n Ser n agt n Gl n Gl n Gl n gca | Thrace agt age | aga Arg aaaa Lys 275 gga Gly ccc Pro | Ala gag Glu 260 gag Glu ctg Leu aaa Lys cat | gct Ala 245 agg Arg Glu cct Pro acc Asn gtt Val 325 tta | aat Asn cca Pro tta Leu acc Thr agg Arg 310 tca Ser | cca Pro aga Arg cca Pro 295 aca Thr gaa Glu | Ser aca Thr gga Gly 280 att Ile ytl Val | Asp ttt Phe 265 aat Asr att Ile tat Tyr | Thr 25(tta Lever Tyr tac Tyr Lys tct Ser 33(cat | gag Glu A act Thr Gctt Lev Ctg Asr 315 Gga Gly Cacc | Phe CCa Pro tca Sen Sen 300 ttt Phe aat Asr | a gaa o Gli a cto 28! a aaq a Ly:) c gao c tac t Ty: | a ggc a ggc u Gly 270 g gag u Glu 5 g gaa s Glu g aaa u Lys c caa r Gln t gtt | 939 987 1035 1083 |
| 999 100 100 100 100 100 100 111 111 112 112 | D Let D | Asr 240 aaaa Lys GCa Ala att GGly Leu 320 ata GIle | gac n Asp n Asp n tca s Ser n agt n Ser n agt n Gl n Gl n Gl n gca | Thrace agt age | aga Arg aaaa Lys 275 gga Gly ccc Pro | Ala gag Glu 260 gag Glu ctg Leu aaa Lys cat His | gct Ala 245 Agg Arg Glu cct Pro Asn yal 325 tta Leu | aat Asn cca Pro tta Leu acc Thr agg Arg 310 tca Ser | cca Pro aga Arg cca Pro 295 aca Thr gaa Glu | Ser aca Thr gga Gly 280 att Ile ytl Val | Asp ttt Phe 265 aat Asr att Ile tat Tyr | Thr 250 tta Lev Grant Val tac Tyr Lys tct Ser 330 cat His | gag Glu A act Thr Gctt Lev Ctg Asr 315 Gga Gly Cacc | Phe CCa Pro tca Sen Sen 300 ttt Phe aat Asr | a gaa o Gli a cto 28! a aaq a Ly:) c gao c tac t Ty: | a ggc a ggc a Gly 270 g gag a Glu 5 g gaa s Glu g aaa Lys c caa r Gln t gtt r Val | 939 987 1035 1083 |
| 999 100 100 100 100 100 100 111 111 111 | D Let 1 S gct 1 Ala 2 5 5 7 aat 3 Asr 1 tgc 2 Cys 3 gat 5 Asr 7 acc 7 acc 7 acc 1 tgc 2 Cys 3 tgt 4 Cys 3 tgt 4 Cys 3 tgt 5 3 5 3 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 | Asr 240 aaaa Lys gca Ala atts Ile Ggg Gly Leu 320 atta ile | gac n Asp n Asp n Asp n a tca s Ser n agt n Ser n agt n Glr n gca n Ala | Thrace agt age | aga Arg aaa Lys 275 gga Gly ccc Pro | Ala gag Glu 260 gag Glu ctg Leu aaa Lys cat His | gct Ala 245 Agg Arg Glu cct Pro Asn gtt Val 325 tta Leu | aat Asn cca Pro tta Leu acc Thr agg Arg 310 tca Ser gga Gly | cca Pro aga Arg cca Pro 295 aca Thr gaa Glu | ser aca Thr gga Gly 280 att Ile Val | Asp ttt Phe 265 aat Asr att Ile tat Tyr gao Asp | Thr 250 tta Leu Gran Val tac Tyr Lys tct Ser 330 cat 6 His | gag Glu A act Thr Gctt Leu Ctgg Trr Gag Gly Cacc Thr | Phe CCa C Pro tca Sen Sen 300 ttt Phe aat Asr att | a gaa gaa cto Lei 28! a aag Ly: c gag ttac ttac se Se: | a ggc a ggc a Gly 270 g gag a Glu 5 g gaa s Glu g aaa Lys c caa r Gln t gtt r Val 350 | 939 987 1035 1083 1131 |
| 999 100 100 100 100 100 100 100 100 110 11 | D Let 1 Ala 3 gct 4 Ala 5 255 7 aat 3 Asr 6 Cys 8 gat 6 Asr 7 acc 7 acc 7 acc 8 Thr 1 Cys 1 Cys 3 Asr 7 acc 8 Asr 9 acc 1 Asr 9 acc 1 Asr 1 | Asr 240 aaaa Lys gca Ala att Gly Gly ttg 320 atta Hel | gac n Asr n Asr n Asr n Asr n Asr n Ser n agt n Ser n Asr n Gl | Thrace agt age | aga Arg aaaa Lys 275 gga Gly ccc Pro | Ala gag Glu 260 gag Glu ctg Leu aaa Lys cat His gca Ala 340 cca | gct Ala 245 agg Arg gaa Glu cct Pro aac Asn gtt Val 325 tta Leu tac | aat Asn Cca Pro tta Leu acc Thr agg Arg 310 tca Ser gga Gly | cca Pro aga Arg cca Pro 295 aca Thr gaa Glu gcc | Ser aca Thr gga Gly 280 att Ile Val gca Ala | Asp ttt Phe 265 aat Asr att Ile tat Tyr gao Asp cao His 345 gco | Thr 250 tta Lever 1 years 2 tota 330 2 tota 330 3 coata 3 coata 6 cota | gag Glu a act Thr ctt Leu ctgg Trp gaac SAsn 315 cgga cGly cacc Thr | Phe CCa C Pro tca Sen Sen 300 Ala 300 ttta Phe a aat att | Ty: a gaa b Gli c te c 28! a aag c gaa b gaa c to c gag c tac c to c Se: c cti | a ggc a ggc a Gly 270 g gag a Glu 5 g gaa s Glu g aaa Lys c caa r Gln t gtt r Val | 939 987 1035 1083 |

RAW SEQUENCE LISTING DATE: 06/02/2006
PATENT APPLICATION: US/09/301,380A TIME: 09:38:41

Input Set : A:\PTO.txt

| 129 | | | | | 355 | | | | | 360 | | | | | 365 | | |
|-----|------------|----------|-------|---|----------|------|------|--------|------|------|-------|--------------|------|--------------|-------|-------|--------------|
| | ctg | tac | 003 | ~~~ | | ast | ~~~ | 300 | ++~ | | taa | 202 | aat | 2.2.t | | 220 | 1275 |
| | Leu | | | | | | | | | | | | | | | | 12/5 |
| 133 | ьеu | 261 | PIQ | 370 | Giu | Asp | GIY | 1111 | 375 | 116 | Cys | Arg | Ala | 380 | GIY | ASII | |
| | 222 | 222 | 000 | | 2++ | 200 | +~~ | ++- | | 224 | ~~~ | ~+ ~ | | | ~~~ | a++ | 1222 |
| | CCC | | | | | | | | | | | | | | | | 1323 |
| | Pro | ьуѕ | 385 | Arg | iie | ser | пр | 390 | TIIL | ASII | GIY | vaı | | 116 | GIU | 11e | |
| 137 | ~~~ | aa+ | | ~~~ | | | 200 | | a+ a | ~~+ | ~~~ | ~~+ | 395 | -++ | -++ | | 1271 |
| | gcc | | | | | | - | | | | | _ | | | | | 1371 |
| | Ala | 400 | Asp | ASP | PIO | ser | | ьys | iie | ASP | GIY | _ | IIII | тте | тте | Pile | |
| 141 | tan | | ~++ | | ~~~ | 200 | 405 | 2 cr t | ~~~ | ~+ · | + - + | 410 | +~~ | - | ~~~ | + ~ + | 1410 |
| | tca | | _ | | _ | _ | | _ | _ | _ | | _ | _ | | _ | | 1419 |
| | Ser 415 | ASII | vai | GIII | GIU | 420 | ser | ser | Ala | vai | _ | GIII | Cys | ASII | Ala | | |
| | | ~ | + - + | ~~- | +-+ | | | | | ~ | 425 | | | | | 430 | 1467 |
| | aat | | | | | | _ | _ | | _ | | - | | | _ | - | 1467 |
| | Asn | Gru | TYL | GIA | 435 | ьеи | ьеи | Ala | ASII | | Pne | vai | ASII | vaı | | Ala | |
| 149 | ~~~ | aa2 | 999 | ~~~ | | ata | 202 | aat | ~~~ | 440 | 242 | a+ a | + | ~~~ | 445 | 244 | 1515 |
| | gag Glu | | | | | | | | | | | | | | | | 1515 |
| 152 | GIU | PIO | PIO | 450 | 116 | ьец | 1111 | PIO | | AŞII | 1111 | ьeu | ıyı | | vai | TIE | |
| | ~~~ | 224 | -~~ | | ~~+ | ++- | a+ a | ~~~ | 455 | ~~~ | | | ~~~ | 460 | | | 1562 |
| | gca Ala | | | | | | | | | | | | | | | | 1563 |
| 157 | на | ASII | 465 | PIO | на | ьeu | neu | 470 | Cys | ніа | Pne | Pile | 475 | 261 | PIO | ьeu | |
| | 999 | 200 | | ~~~ | +~~ | +++ | | | aat | | ~~~ | 2 ~ t | | att | a > t | ~~~ | 1611 |
| | cca Pro | | | | | | | | | | | | | | | | 1611 |
| 161 | FIO | 480 | 116 | GIU | тър | FILE | 485 | GIY | Ата | цуъ | Gry | 490 | Ата | пец | птъ | GIU | |
| | gat | | tat | att | tta | cat | | ast | aas | act | tta | | ato | 222 | cat | act | 1659 |
| | Asp | | | | | | | | | | | | | | | | 1039 |
| | 495 | 110 | + y + | vai | Бец | 500 | GIU | Poll | Gry | 1111 | 505 | GIU | 116 | цуз | voh | 510 | |
| | aca | taa | atc | att | 222 | | att | cct | ata | acc | | nes | aac | ant | 202 | | 1707 |
| | Thr | | | | | | | | | | | | | | | | 1707 |
| 169 | | | -10 | V 44 1 | 515 | 014 | 110 | ,,,, | val | 520 | 0111 | Lys | тор | DCI | 525 | Cly | |
| | act | tat | aca | tat | | gca | agg | aat | aaa | | aaa | ato | gca | aaq | | gaa | 1755 |
| | Thr | | | | | | | | | | | | | | | | 1,33 |
| 173 | | -1- | | 530 | | | 5 | | 535 | | 0-1 | | | 540 | | 0_0 | |
| | gtt | cac | tta | | CCC | gaa | tat | gca | | at.a | caa | aσa | aaa | | at.o | at.a | 1803 |
| | Val | | | | | | | | | | | | | | | | |
| 177 | | | 545 | | | | -1- | 550 | | | | 5 | 555 | | | | |
| | tcc | ttt | | tac | aaa | ata | aaa | | gat | cac | acc | tta | | ctc | act | atc | 1851 |
| | Ser | | | | | | | | | | | | | | | | |
| 181 | | 560 | | -1- | _1 - | | 565 | | | | | 570 | | | | | |
| | ctg | | cta | aaq | qac | aac | | gaa | cta | ccc | aqt | | σaa | agg | ttc | act | 1899 |
| | Leu | | | | | | | | | | | | | | | | |
| | 575 | F | | -1- | - | 580 | | | | | 585 | | | | | 590 | |
| | gtt | qac | aaq | qat | cat | | ata | qta | gct | gat | | aqt | qac | qat | qac | | 1947 |
| | Val | _ | _ | _ | | | | - | _ | _ | _ | _ | - | _ | _ | _ | |
| 189 | | ~ F | 4- | ······································· | 595 | | | | | 600 | | | | | 605 | | |
| | ggg | acc | tac | aca | | ata | qcc | aac | acc | | cta | gac | aσc | atc | | acc | 1995 |
| | Gly | | | | | | | | | | | | | | | | - |
| 193 | - 4 | - | 4 | 610 | . 4 | | 34 | | 615 | | | L | | 620 | | | |
| | | | | | | | | | | | | | | | | | |

RAW SEQUENCE LISTING DATE: 06/02/2006
PATENT APPLICATION: US/09/301,380A TIME: 09:38:41

Input Set : A:\PTO.txt

| | _ | _ | | | _ | _ | gtt | _ | | | | | | _ | | _ | 2043 |
|-----|----------|-------------|--------------|------|-------------|--------------|------------|--------------|-------|---------------|------|-------|-------|-------------|------|------|------|
| | Ser | Ala | | Leu | Ser | Val | Val | | Pro | Thr | Pro | Thr | | Ala | Pro | Val | |
| 197 | | | 625 | | | | | 630 | | | | | 635 | | | | 2001 |
| | | | - | | | | CCC | | | | _ | | | _ | | | 2091 |
| | туr | _ | vai | Pro | Asn | Pro | Pro | Pne | Asp | Leu | GIU | | Thr | Asp | GIN | Leu | |
| 201 | ~~~ | 640 | 5 6 + | ~++ | | a+ a | 645 | + ~ ~ | | ~~~ | ~~~ | 650 | ~~~ | | | 200 | 2120 |
| | | | | | | | tca | | | | | | | | | | 2139 |
| | 655 | пуѕ | ser | vaı | GIII | 660 | Ser | пр | Int | PIO | 665 | Asp | Asp | ASII | ASII | 670 | |
| | | a++ | 202 | 222 | ++- | | atc | 422 | t a t | ~ ~ ~ | | aas | 2 t a | a aa | 224 | | 2107 |
| | | | | | | | Ile | | | | | | | | | | 2187 |
| 209 | FIÇ | 116 | 1111 | цур | 675 | 116 | 116 | Gru | ıyı | 680 | ASP | AIa | Mec | nis | 685 | FIO | |
| | aaa | cta | taa | cac | | caa | act | caa | att | | aaa | aca | cad | acc | | acc | 2235 |
| | | | | | | | Thr | | | | | | | | | | 22,5 |
| 213 | 017 | 200 | | 690 | | 0111 | | 014 | 695 | 501 | 017 | | 0111 | 700 | **** | 1114 | |
| | cag | cta | aaσ | | tct | cct. | tac | ata | | tac | t.cc | ttc | cac | | atα | gca | 2283 |
| | _ | _ | _ | _ | | | Tyr | | | | | | _ | | _ | - | |
| 217 | | | 705 | | | | -1- | 710 | | -1- | | | 715 | | | | |
| 219 | ata | aac | aqc | att | aaa | aaq | agc | ttq | ccc | aqc | qaq | aca | tct | qaq | caq | tat | 2331 |
| | | | _ | | | _ | Ser | _ | | _ | | | | | _ | | |
| 221 | | 720 | | | • | • | 725 | | | | | 730 | | | | • | |
| 223 | ttg | acg | aaa | gcc | tca | gaa | cca | gat | aaa | aac | ccc | aca | gct | gtg | gaa | gga | 2379 |
| 224 | Leu | Thr | Lys | Ala | Ser | Glu | Pro | Asp | Lys | Asn | Pro | Thr | Ala | Val | Glu | Gly | |
| 225 | 735 | | | | | 740 | | | | | 745 | | | | | 750 | |
| 227 | ctg | gga | tca | gag | cct | gat | aat | ttg | gag | att | acg | tgg | aag | CCC | ttg | aat | 2427 |
| 228 | Leu | Gly | Ser | Glu | ${\tt Pro}$ | Asp | Asn | Leu | Glu | Ile | Thr | Trp | Lys | Pro | Leu | Asn | |
| 229 | | | | | 755 | | | | | 760 | | | | | 765 | | |
| | | | | | | | cca | | | | | | | | | | 2475 |
| | Gly | Phe | Glu | | Asn | Gly | Pro | Gly | | Gln | Tyr | Lys | Val | | Trp | Arg | |
| 233 | | | | 770 | | | | | 775 | | | | | 780 | | | |
| | _ | | _ | | | | gaa | | | | | _ | | _ | | _ | 2523 |
| | GIn | Lys | _ | GIY | Asp | Asp | Glu | | Thr | Ser | Val | Val | | Ala | Asn | Val | |
| 237 | . | | 785 | | | | | 790 | | | | _ 4 4 | 795 | | | | 0551 |
| | | | | | _ | | ggc | _ | | | | _ | | | _ | | 2571 |
| | ser | _ | Tyr | TIE | vaı | ser | Gly | Thr | Pro | Thr | Pne | | Pro | Tyr | ьeu | шe | |
| 241 | | 800 | ~~~ | ~~~ | a+ ~ | - | 805 | 2+4 | ~~~ | +++ | ~~~ | 810 | ~~~ | | aat | ~+- | 2610 |
| | | | | | | | gac Asp | | | | | | | | | | 2619 |
| 245 | _ | vai | GIII | Ala | цец | 820 | ASP | Met | Gry | File | 825 | PIO | GIU | PIO | ніа | 830 | |
| | | ato | aas | cat | tat | | gaa | asa | ctc | CCa | | ata | aat | aat | aaa | | 2667 |
| | | | | | | | Glu | | | | | | | | | | 2007 |
| 249 | VUI | ricc | Cly | 1113 | 835 | Oly | Olu | нор | пси | 840 | Nec | Vai | лια | 110 | 845 | ASII | |
| | ata | cat | ata | aat | | ata | aac | agt | acc | | acc | gag | ata | cac | | gac | 2715 |
| | _ | _ | | | | | Asn | - | | | _ | | | | | | |
| 253 | | - 5 | | 850 | | | | | 855 | | | | | 860 | P | P | |
| | cca | qta | cct | | aaa | aqc | atc | cqa | | cac | cta | caa | qac | | caa | att | 2763 |
| | | | | | | | Ile | | | | | | | | | | |
| 257 | | | 865 | | 4 | | | 870 | - 4 | _ | | | 875 | 4 - | - 5 | | |
| | tac | tat | tgg | aaq | acc | cag | agt | tca | tct | aaa | aga | aac | aga | cgt | cac | att | 2811 |
| | | | | _ | | _ | _ | | | | _ | | _ | _ | | | |

RAW SEQUENCE LISTING DATE: 06/02/2006 PATENT APPLICATION: US/09/301,380A TIME: 09:38:41

Input Set : A:\PTO.txt

| 261 | Tyr | Tyr 880 | Trp | Lys | Thr | Gln | Ser 885 | Ser | Ser | Lys | Arg | Asn 890 | Arg | Arg | His | Ile | |
|--|--|--|---|--|--|---|---|---|--|--|--|---|---|---|---|--|--------------------------------------|
| 263 | gag | aaa | aaσ | atc | ctc | acc | ttc | caa | aac | age | aag | act | cat | aac | atg | t.t.a | 2859 |
| | Glu | | | | | | | | | | | | | | | | |
| | 895 | цуэ | цуз | 116 | Deu | 900 | FILE | GIII | GIY | Ser | 905 | 1111 | 1112 | Gry | 1.10.0 | 910 | |
| | | | | | | | | | | | | | | | | | 2007 |
| | ccg | | | | | | _ | | | | _ | | - | _ | - | | 2907 |
| | Pro | Gly | Leu | Glu | Pro | Phe | Ser | His | \mathtt{Tyr} | | Leu | Asn | Val | Arg | Val | Val | |
| 269 | | | | | 915 | | | | | 920 | | | | | 925 | | |
| 271 | aat | ggg | aaa | ggg | gag | ggc | cca | gcc | agc | cct | gac | aga | gtc | ttt | aat | act | 2955 |
| 272 | Asn | Gly | Lys | Gly | Glu | Gly | Pro | Ala | Ser | Pro | Asp | Arg | Val | Phe | Asn | Thr | |
| 273 | | _ | _ | 930 | | _ | | | 935 | | _ | _ | | 940 | | | |
| 275 | cca | gaa | gga | atc | CCC | agt | act | ccc | tca | tct | tta | aaq | att | ata | aat | cca | 3003 |
| | Pro | | | | | | | | | | | | | | | | |
| 277 | | 014 | 945 | · u · | 110 | DCI | 71±u | 950 | DCI | DCI | шеш | шур | 955 | vai | 11011 | 110 | |
| | 202 | ata | | tat | ata | 20+ | ++~ | | + ~~ | ant. | 999 | ~~~ | | a 2 a | ~~~ | 22 + | 20E1 |
| | aca | _ | _ | | | | _ | _ | | _ | | _ | | | _ | | 3051 |
| | Thr | | ASP | ser | Leu | THE | | GIU | rrp | Asp | Pro | | Ser | HIS | Pro | ASII | |
| 281 | | 960 | | | | | 965 | | | | | 970 | | | | | |
| | ggc | | _ | | | | | | _ | | _ | | | | _ | | 3099 |
| | Gly | Ile | Leu | Thr | Glu | - | Thr | Leu | Lys | Tyr | Gln | Pro | Ile | Asn | Ser | Thr | |
| 285 | 975 | | | | | 980 | | | | | 985 | | | | | 990 | |
| 287 | cat | gaa | tta | ggc | cct | ctg | gta | gat | ttg | aaa | att | cct | gcc | aac | aag | aca | 3147 |
| 288 | His | Glu | Leu | Gly | Pro | Leu | Val | Asp | Leu | Lys | Ile | Pro | Ala | Asn | Lys | Thr | |
| 289 | | | | | 995 | | | | 1 | 1000 | | | | | 1005 | | |
| 291 | cgg | tgg | act | tta | aaa | aat | tta | aat | ttc | agc | act | cqa | tat | aag | ttt | tat | 3195 |
| | Arg | | | | | | | | | _ | | _ | | _ | | | |
| 293 | | _ | | 1010 | 4 | | | | 1015 | | | | - | 1020 | | - | |
| | ttc | tat | gca | caa | aca | tca | gca | gga | tca | gga | agt | caa | att | aca | gag | gaa | 3243 |
| | Phe | | | | | | | | | | | | | | | | 3213 |
| 297 | | _ | | 0111 | **** | DCI | | 1030 | 001 | O-1 | 001 | | 1035 | | 014 | 0.10 | |
| 20, | | | 1025 | | | | | | | | | - | | | | | |
| 299 | aca | | 1025 | act | ata | ast | | act | aat | att | at t | 003 | CCF | ast | at a | aat | 3201 |
| | gca | gta | aca | | | | gaa | | | | | | | | | | 3291 |
| 300 | Āla | gta Val | aca | | | Āsp | gaa Glu | | | | Leu | Pro | | | | | 3291 |
| 300 301 | Āla | gta Val L040 | aca Thr | Thr | Val | Āsp | gaa Glu 1045 | Āla | Gly | Ile | Leu | Pro L050 | Pro | Āsp | Val | Gly | |
| 300 301 303 | Ala gca | gta Val L040 ggc | aca Thr aaa | Thr gtt | Val caa | Asp gct | gaa Glu 1045 gta | Ala | Gly | Ile agg | Leu atc | Pro 1050 agc | Pro aat | Asp | Val | Gly gct | 3291 |
| 300 301 303 304 | Ala gca Ala | gta Val 1040 ggc Gly | aca Thr aaa | Thr gtt | Val caa Gln | Asp gct Ala | gaa Glu 1045 gta | Ala | Gly | Ile agg Arg | Leu atc Ile | Pro 1050 agc | Pro aat | Asp | Val act Thr | Gly gct Ala | |
| 300 301 303 304 305 | Ala gca Ala 1055 | gta Val 1040 ggc Gly | aca Thr aaa Lys | Thr gtt Val | Val caa Gln | Asp gct Ala | gaa Glu 1045 gta Val | Ala aat Asn | Gly acc Thr | Ile agg Arg | Leu atc Ile 1065 | Pro 1050 agc Ser | Pro aat Asn | Asp ctt Leu | Val act Thr | Gly gct Ala | |
| 300 301 303 304 305 | Ala gca Ala | gta Val 1040 ggc Gly | aca Thr aaa Lys | Thr gtt Val | Val caa Gln | Asp gct Ala | gaa Glu 1045 gta Val | Ala aat Asn | Gly acc Thr | Ile agg Arg | Leu atc Ile 1065 | Pro 1050 agc Ser | Pro aat Asn | Asp ctt Leu | Val act Thr | Gly gct Ala | |
| 300 301 303 304 305 307 | Ala gca Ala 1055 | gta Val 1040 ggc Gly G | aca Thr aaa Lys gct | Thr gtt Val gag | Val caa Gln acc | Asp gct Ala LO60 tat | gaa Glu 1045 gta Val gcc | Ala aat Asn aat | Gly acc Thr | Ile agg Arg agt | Leu atc Ile 1065 tgg | Pro 1050 agc Ser gaa | Pro aat Asn tat | Asp ctt Leu gag | Val act Thr gga | Gly gct Ala 1070 cca | 3339 |
| 300 301 303 304 305 307 | Ala gca Ala 1059 gca | gta Val 1040 ggc Gly G | aca Thr aaa Lys gct | Thr gtt Val gag Glu | Val caa Gln acc | Asp gct Ala LO60 tat | gaa Glu 1045 gta Val gcc | Ala aat Asn aat | Gly acc Thr atc Ile | Ile agg Arg agt | Leu atc Ile 1065 tgg | Pro 1050 agc Ser gaa | Pro aat Asn tat | Asp ctt Leu gag Glu | Val act Thr gga | Gly gct Ala 1070 cca | 3339 |
| 300 301 303 304 305 307 308 309 | Ala gca Ala 1059 gca Ala | gta Val 1040 ggc Gly gct Ala | aca Thr aaa Lys gct Ala | Thr gtt Val gag Glu | Val caa Gln acc Thr | Asp gct Ala 1060 tat Tyr | gaa Glu 1045 gta Val gcc Ala | Ala aat Asn aat Asn | Gly acc Thr atc Ile | agg Arg agt ser | Leu atc Ile 1065 tgg Trp | Pro 1050 agc Ser gaa Glu | Pro aat Asn tat Tyr | Asp ctt Leu gag Glu | Val act Thr gga Gly | gct Ala 1070 cca Pro | 3339 |
| 300 301 303 304 305 307 308 309 311 | Ala gca Ala 1055 gca Ala gag | gta Val 1040 ggc Gly gct Ala | aca Thr aaa Lys gct Ala | Thr gtt Val gag Glu aac | Val caa Gln acc Thr l075 | Asp gct Ala 1060 tat Tyr | gaa Glu 1045 gta Val gcc Ala | Ala aat Asn aat Asn | Gly acc Thr atc Ile | agg Arg agt Ser 1080 | Leu atc Ile 1065 tgg Trp | Pro 1050 agc Ser gaa Glu gca | Pro aat Asn tat Tyr | Asp ctt Leu gag Glu agc | Val act Thr gga Gly 1085 aaa | gct Ala 1070 cca Pro | 3339 3387 |
| 300 301 303 304 305 307 308 309 311 312 | Ala gca Ala 1059 gca Ala | gta Val 1040 ggc Gly gct Ala | aca Thr aaa Lys gct Ala gtg Val | Thr gtt Val gag Glu aac Asn | Val caa Gln acc Thr l075 | Asp gct Ala 1060 tat Tyr | gaa Glu 1045 gta Val gcc Ala | Ala aat Asn aat Asn gaa Glu | Gly acc Thr atc Ile tat Tyr | agg Arg agt Ser 1080 | Leu atc Ile 1065 tgg Trp | Pro 1050 agc Ser gaa Glu gca | Pro aat Asn tat Tyr ggc Gly | Asp ctt Leu gag Glu agc Ser | Val act Thr gga Gly 1085 aaa | gct Ala 1070 cca Pro | 3339 3387 |
| 300 301 303 304 305 307 308 309 311 312 313 | Ala gca Ala 1059 gca Ala gag Glu | gta Val 1040 ggc Gly gct Ala cat | aca Thr aaa Lys gct Ala gtg Val | Thr gtt Val gag Glu aac Asn | val caa Gln acc Thr 1075 ttt Phe | Asp gct Ala 1060 tat Tyr tat | gaa Glu 1045 gta Val gcc Ala gtt | Ala aat Asn aat Asn gaa Glu | Gly acc Thr atc Ile tat Tyr 1095 | agg Arg agt ser 1080 ggt | Leu atc Ile 1065 tgg Trp gta Val | Pro 1050 agc Ser gaa Glu gca Ala | Pro aat Asn tat Tyr ggc Gly | Asp ctt Leu gag Glu agc Ser | act Thr gga Gly 1085 aaa Lys | gct Ala 1070 cca Pro gaa Glu | 3339 3387 3435 |
| 300 301 303 304 305 307 308 309 311 312 313 315 | Ala gca Ala 1059 gca Ala gag Glu | gta Val 1040 ggc Gly gct Ala cat His | aca Thr aaa Lys gct Ala gtg Val aga | gtt Val gag Glu aac Asn 1090 aaa | Val caa Gln acc Thr 1075 ttt Phe gaa | Asp gct Ala 1060 tat Tyr tat Tyr | gaa Glu 1045 gta Val gcc Ala gtt Val | Ala aat Asn aat Asn gaa Glu aat | Gly acc Thr atc Ile tat Tyr 1095 ggt | agg Arg agt Ser 1080 ggt Gly | Leu atc Ile 1065 tgg Trp gta Val | Pro 1050 agc Ser gaa Glu gca Ala | Pro aat Asn tat Tyr ggc Gly ttc | Asp ctt Leu gag Glu agc Ser 100 ttt | Val act Thr gga Gly 1085 aaa Lys | Gly gct Ala 1070 cca Pro gaa Glu tta | 3339 3387 |
| 300 301 303 304 305 307 308 309 311 312 313 315 316 | Ala gca Ala 1059 gca Ala gag Glu | gta Val 1040 ggc Gly gct Ala cat His | aca Thr aaa Lys gct Ala gtg Val aga Arg | gtt Val gag Glu aac Asn 1090 aaa | Val caa Gln acc Thr 1075 ttt Phe gaa | Asp gct Ala 1060 tat Tyr tat Tyr | gaa Glu 1045 gta Val gcc Ala gtt Val gta Val | Ala aat Asn aat Asn gaa Glu aat Asn | Gly acc Thr atc Ile tat Tyr 1095 ggt | agg Arg agt Ser 1080 ggt Gly | Leu atc Ile l065 tgg Trp gta Val | Pro 1050 agc Ser gaa Glu gca Ala agc Ser | Pro aat Asn tat Tyr ggc Gly ttc Phe | Asp ctt Leu gag Glu agc Ser 100 ttt | Val act Thr gga Gly 1085 aaa Lys | Gly gct Ala 1070 cca Pro gaa Glu tta | 3339 3387 3435 |
| 300 301 303 304 305 307 308 309 311 312 313 315 316 317 | gca Ala 1055 gca Ala gag Glu gaa Glu | gta Val 1040 ggc Gly gct Ala cat His | aca Thr aaa Lys gct Ala gtg Val aga Arg | gtt Val gag Glu aac Asn 1090 aaa Lys | Caa Gln acc Thr 1075 ttt Phe gaa Glu | Asp gct Ala 1060 tat Tyr tat Tyr | gaa Glu 1045 gta Val gcc Ala gtt Val gta | Ala aat Asn aat Asn gaa Glu aat Asn | Gly acc Thr atc Ile tat Tyr 1095 ggt Gly | agg Arg agt Ser 1080 ggt Gly tct Ser | atc Ile 1065 tgg Trp gta Val cgg Arg | Pro 1050 agc Ser gaa Glu gca Ala agc Ser | Pro aat Asn tat Tyr ggc Gly ttc Phe | Asp ctt Leu gag Glu agc Ser 100 ttt Phe | Val act Thr gga Gly 1085 aaa Lys ggg Gly | gct Ala 1070 cca Pro gaa Glu tta Leu | 3339 3387 3435 3483 |
| 300 301 303 304 305 307 308 309 311 312 313 315 316 317 319 | Ala gca Ala 1055 gca Ala gag Glu gaa Glu aag | gta Val 1040 ggc Gly gct Ala cat His tgg | aca Thr aaa Lys gct Ala gtg Val aga Arg 105 cta | Thr gtt Val gag Glu aac Asn l090 aaa Lys atg | Val caa Gln acc Thr 1075 ttt Phe gaa Glu cca | Asp gct Ala 1060 tat Tyr tat Tyr att Ile | gaa Glu 1045 gta Val gcc Ala gtt Val gta Val | Ala aat Asn aat Asn Glu aat Asn l110 gca | Gly acc Thr atc Ile tat Tyr l095 ggt Gly tac | agg Arg agt ser 1080 ggt Gly tct Ser | Leu atc Ile 1065 tgg Trp gta Val cgg Arg | Pro 1050 agc Ser gaa Glu gca Ala agc Ser | Pro aat Asn tat Tyr ggc Gly ttc Phe 115 gtt | Asp ctt Leu gag Glu agc ser 100 ttt Phe | Val act Thr gga Gly 1085 aaa Lys ggg Gly | gct Ala 1070 cca Pro gaa Glu tta Leu gtg | 3339 3387 3435 |
| 300 301 303 304 305 307 308 309 311 312 313 315 316 317 319 320 | Ala gca Ala 1059 gca Ala gag Glu gaa Glu aag Lys | yta Val 1040 ggc Gly gct Ala cat His tgg Trp | aca Thr aaa Lys gct Ala gtg Val aga Arg 105 cta | Thr gtt Val gag Glu aac Asn l090 aaa Lys atg | Val caa Gln acc Thr 1075 ttt Phe gaa Glu cca | Asp gct Ala 1060 tat Tyr tat Tyr att Ile gga Gly | gaa Glu 1045 gta Val gcc Ala gtt Val gta Val | Ala aat Asn aat Asn Glu aat Asn l110 gca | Gly acc Thr atc Ile tat Tyr l095 ggt Gly tac | agg Arg agt ser 1080 ggt Gly tct Ser | atc Ile 1065 tgg Trp gta Val cgg Arg | Pro 1050 agc Ser gaa Glu gca Ala agc Ser cga Arg | Pro aat Asn tat Tyr ggc Gly ttc Phe 115 gtt | Asp ctt Leu gag Glu agc ser 100 ttt Phe | Val act Thr gga Gly 1085 aaa Lys ggg Gly | gct Ala 1070 cca Pro gaa Glu tta Leu gtg | 3339 3387 3435 3483 |
| 300 301 303 304 305 307 308 309 311 312 313 315 316 317 319 320 321 | Ala gca Ala 1059 gca Ala gag Glu gaa Glu aag Lys | yta Val 1040 ggc Gly gct Ala cat His tgg Trp ggt Gly | aca Thr aaa Lys gct Ala gtg Val aga Arg 105 cta Leu | gtt Val gag Glu aac Asn 1090 aaa Lys atg | Val caa Gln acc Thr 1075 ttt Phe gaa Glu cca Pro | Asp gct Ala 1060 tat Tyr tat Tyr att Ile gga Gly | gaa Glu 1045 gta Val gcc Ala gtt Val gta Thr | Ala aat Asn gaa Glu aat Asn l110 gca Ala | Gly acc Thr atc Ile tat Tyr 1095 ggt Gly tac Tyr | agg Arg agt Ser 1080 ggt Gly tct Ser aaa Lys | atc Ile 1065 tgg Trp gta Val cgg Arg | Pro 1050 agc Ser gaa Glu gca Ala agc Ser cga Arg | aat Asn tat Tyr ggc Gly ttc Phe 115 gtt Val | Asp ctt Leu gag Glu agc Ser 100 ttt Phe ggt Gly | Val act Thr gga Gly 1085 aaa Lys ggg Gly gct Ala | gct Ala 1070 cca Pro gaa Glu tta Leu gtg Val | 3339 3387 3435 3483 3531 |
| 300 301 303 304 305 307 308 309 311 312 313 315 316 317 319 320 321 323 | Ala gca Ala 1059 gca Ala gag Glu gaa Glu aag Lys | yta Val 1040 ggc Gly gct Ala cat His tgg Trp ggt Gly 120 gac | aca Thr aaa Lys gct Ala gtg Val aga Arg 105 cta Leu tct | gtt Val gag Glu aac Asn 1090 aaa Lys atg Met | Val caa Gln acc Thr l075 ttt Phe gaa Glu cca Pro | Asp gct Ala 1060 tat Tyr tat Tyr att Ile gga Gly | gaa Glu 1045 gta Val gcc Ala gtt Val gta Thr 1125 agt | Ala aat Asn aat Asn Glu aat Asn l110 gca Ala tca | Gly acc Thr atc Ile tat Tyr 1095 ggt Gly tac Tyr | agg Arg agt Ser 1080 ggt Gly tct Ser aaa Lys | Leu atc Ile 1065 tgg Trp gta Val cgg Arg gtt Val gtg | Pro l050 agc Ser gaa Glu gca Ala agc ser cga Arg | Pro aat Asn tat Tyr ggc Gly ttc Phe 115 gtt Val | Asp ctt Leu gag Glu agc Ser 100 ttt Phe ggt Gly aca | Val act Thr gga Gly 1085 aaa Lys ggg Gly gct Ala | gct Ala 1070 cca Pro gaa Glu tta Leu gtg Val cca | 3339 3387 3435 3483 |

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 06/02/2006 PATENT APPLICATION: US/09/301,380A TIME: 09:38:42

Input Set : A:\PTO.txt

Output Set: N:\CRF4\06022006\I301380A.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:8; N Pos. 1

VERIFICATION SUMMARY

DATE: 06/02/2006

PATENT APPLICATION: US/09/301,380A

TIME: 09:38:42

Input Set : A:\PTO.txt

Output Set: N:\CRF4\06022006\I301380A.raw

L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:700 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0

Raw Sequence Listing before editing (for reference only)



IFW16

RAW SEQUENCE LISTING DATE: 06/01/2006
PATENT APPLICATION: US/09/301,380A TIME: 12:11:12

Input, Set : A:\20093A-21US-Substitute Sequence Listing.txt

Output Set: N:\CRF4\06012006\I301380A.raw

```
3 <110> APPLICANT: Murphy, Gerald P.
4 Boynton, Alton L.
5 Sehgal, Anil
7 <120> TITLE OF INVENTION: Nr-CAM GENE, NUCLEIC ACIDS AND NUCLEIC ACID PRODUCTS
8 FOR THERAPEUTIC AND DIAGNOSTIC USES FOR TUMORS
10 <130> FILE REFERENCE: 20093A-002100US
12 <140> CURRENT APPLICATION NUMBER: 09/301,380A
C--> 13 <141> CURRENT FILING DATE: 2001-06-15
15 <150> PRIOR APPLICATION NUMBER: 60/112,098
16 <151> PRIOR FILING DATE: 1998-12-14
18 <150> PRIOR APPLICATION NUMBER: 60/083,152
19 <151> PRIOR FILING DATE: 1998-04-27
21 <160> NUMBER OF SEQ ID NOS: 33
23 <170> SOFTWARE: PatentIn Ver. 2.0
```

ERRORED SEQUENCES

372 <210> SEQ ID NO: 2 373 <211> LENGTH: 1299 374 <212> TYPE: PRT 375 <213> ORGANISM: Homo sapiens 377 <400> SEQUENCE: 2 378 Met Pro Lys Lys Lys Arg Leu Ser Ala Gly Arg Val Pro Leu Ile Leu 381 Phe Leu Cys Gln Met Ile Ser Ala Leu Glu Val Pro Leu Asp Pro Lys 25 384 Leu Leu Glu Asp Leu Val Gln Pro Pro Thr Ile Thr Gln Gln Ser Pro 40 387 Lys Asp Tyr Ile Ile Asp Pro Arg Glu Asn Ile Val Ile Gln Cys Glu 55 390 Ala Lys Gly Lys Pro Pro Pro Ser Phe Ser Trp Thr Arg Asn Gly Thr 70 75 393 His Phe Asp Ile Asp Lys Asp Pro Leu Val Thr Met Lys Pro Gly Thr 85 90 396 Gly Thr Leu Ile Ile Asn Ile Met Ser Glu Gly Lys Ala Glu Thr Tyr 100 105 399 Glu Gly Val Tyr Gln Cys Thr Ala Arg Asn Glu Arg Gly Ala Ala Val 120 402 Ser Asn Asn Ile Val Val Arg Pro Ser Arg Ser Pro Leu Trp Thr Lys 135 140 405 Glu Lys Leu Glu Pro Ile Thr Leu Gln Ser Gly Gln Ser Leu Val Leu 406 145 150

RAW SEQUENCE LISTING DATE: 06/01/2006
PATENT APPLICATION: US/09/301,380A TIME: 12:11:12

Input Set: A:\20093A-21US-Substitute Sequence Listing.txt
Output Set: N:\CRF4\06012006\I301380A.raw

| 408 409 | Pro | Cys | Arg | Pro | Pro 165 | Ile | Gly | Leu | Pro | Pro 170 | Pro | Ile | Ile | Phe | Trp 175 | Met |
|------------|----------|------------|-----------|-----|------------|--------|-------------|------|-----|------------|------------|---------|-----------|------------|------------|----------------|
| 411 | Asp | Asn | Ser | Phe | | Arg | Leu | Pro | | | Glu | Arg | Val | Ser 190 | | Gly |
| 412 | T 011 | 7 ~~ | ~1 | 180 | T 011 | Me | Dha | C | 185 | 77- T | T | D | ~1 | | mb | 7. ~~ |
| 415 | | | 195 | Asp | | _ | | 200 | | | | | 205 | _ | | _ |
| 417 | Glu | Asp 210 | Tyr | Ile | Cys | Tyr | Ala 215 | | | Asn | | Thr 220 | | Thr | Ile | Gln |
| 420 | Gln | Lys | Gln | Pro | Ile | Ser | Val | Lys | Val | Ile | Ser | Val | Asp | Glu | Leu | Asn |
| 421 | 225 | _ | | | | 230 | | _ | | | 235 | | _ | | | 240 |
| 423 | Asp | Thr | Ile | Ala | Ala | Asn | Leu | Ser | Asp | Thr | Glu | Phe | Tyr | Gly | Ala | Lys |
| 424 | | | | | 245 | | | | | 250 | | | | | 255 | |
| 426 | Ser | Ser | Arg | Glu | Arg | Pro | ${\tt Pro}$ | Thr | Phe | Leu | Thr | Pro | Glu | Gly | Asn | Ala |
| 427 | | | | 260 | | | | | 265 | | | | | 270 | | |
| | Ser | Asn | Lys | Glu | Glu | Leu | Arg | _ | Asn | Val | Leu | Ser | Leu | Glu | Cys | Ile |
| 430 | | | 275 | | | | | 280 | | | | | 285 | | | |
| 432 | Ala | Glu | Gly | Leu | Pro | Thr | | Ile | Ile | Tyr | Trp | | Lys | Glu | Asp | Gly |
| 433 | | 290 | | | | | 295 | | | | | 300 | _ | | | |
| | | Leu | Pro | Ŀys | Asn | _ | Thr | Val | Tyr | | | | Gl.u | Lys | Thm. | |
| | 305 | _ | _ | | _ | 310 | _ | _ | | | 315 | | | | | 320 |
| | Gln | Ile | Ile | His | | Ser | Glu | Ala | Asp | | Gly | Asn | Tyr | Gln | _ | Ile |
| 439 | | _ | _ | | 325 | | | | • | 330 | _, | | _ | | 335 | |
| | Ala | Lys | Asn | Ala | Leu | Gly | Ala | Ile | | His | Thr | Ile | Ser | | Arg | Val |
| 442 | . | 37. | | 340 | m | | -1 - | m\ | 345 | D | a 1 | | * | 350 | • | |
| | гуѕ | Ala | | Pro | Tyr | Trp | шe | | Ala | Pro | GIN | Asn | | vai | Leu | ser |
| 445 | Dro | C111 | 355 | Asp | C1 | Thr | T 011 | 360 | Cvc | 7.20 | 777 | λαn | 365 | Λαn | Dro | Tara |
| 448 | PIO | 370 | GIU | Asp | GIY | 1111 | 375 | TIE | Cys | AIG | нта | 380 | GIY | ASII | PLO | ьуѕ |
| | Pro | | Tle | Ser | Trn | T.e.11 | | Δsn | Glv | Val | Pro | | Glu | Tle | Δla | Pro |
| | 385 | Arg | 110 | DCI | тър | 390 | 1111 | Abii | Gry | vai | 395 | 110 | Olu | 110 | niu | 400 |
| | | Asp | Pro | Ser | Ara | | Tle | Asp | Glv | Asp | | Tle | Tle | Phe | Ser | |
| 454 | | <u>-</u> | | | 405 | -1- | | | 1 | 410 | | | | | 415 | |
| | Val | Gln | Glu | Arg | | Ser | Ala | Val | Tyr | | Cys | Asn | Ala | Ser | | Glu |
| 457 | | | | 420 | | | | | 425 | | - | | | 430 | | |
| 459 | Tyr | Gly | Tyr | Leu | Leu | Ala | Asn | Ala | Phe | Val | Asn | Val | Leu | Ala | Glu | Pro |
| 460 | - | - | 435 | | | | | 440 | | | | | 445 | | | |
| 462 | Pro | Arg | Ile | Leu | Thr | Pro | Ala | Asn | Thr | Leu | Tyr | Gln | Val | Ile | Ala | Asn |
| 463 | | 450 | | | | | 455 | | | | | 460 | | | | |
| 465 | Arg | Pro | Ala | Leu | Leu | Asp | Cys | Ala | Phe | Phe | Gly | Ser | Pro | Leu | Pro | Thr |
| 466 | 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| 468 | Ile | Glu | Trp | Phe | Lys | Gly | Ala | Lys | Gly | Ser | Ala | Leu | His | Glu | Asp | Ile |
| 469 | | | | | 485 | | | | | 490 | | | | | 495 | |
| 471 | Tyr | Val | Leu | His | Glu | Asn | Gly | Thr | Leu | Glu | Ile | Lys | Asp | Ala | Thr | \mathtt{Trp} |
| 472 | | | | 500 | | | | | 505 | | | | | 510 | | |
| | Ile | Val | Lys | Glu | Ile | Pro | Val | | Gln | Lys | Asp | Ser | Thr | Gly | Thr | Tyr |
| 475 | | | 515 | | | | | 520 | | | | | 525 | | | |
| 477 | Thr | Cys | Val | Ala | Arg | Asn | _ | Leu | Gly | Met | Ala | | Așn | Glu | Val | His |
| 478 | | 530 | | _ | | | 535 | | _ | | | 540 | | | | |
| 480 | Leu | Gln | Pro | Glu | Tyr | Ala | Val | Val | Gln | Arg | Gly | Ser | Met | Val | Ser | Phe |

ing general extragal and the transfer and the second extragal

RAW SEQUENCE LISTING DATE: 06/01/2006
PATENT APPLICATION: US/09/301,380A TIME: 12:11:12

Input Set : A:\20093A-21US-Substitute Sequence Listing.txt

| | 481 | | | | | | 550 | | | | | 555 | | | | | 560 | |
|-----|-----|-------------|------|------|------|-----|----------------|------|-------------|-----|-----|-----|-----|-----|-----|------|-----|--|
| | 483 | Glu | Cys | Lys | Val | Lys | His | Asp | His | Thr | | Ser | Leu | Thr | Val | Leu | Trp | |
| | 484 | | | | | 565 | | | | | 570 | | | | | 575 | | |
| | 486 | Leu | Lys | Asp | Asn | Arg | Glu | Leu | Pro | Ser | Asp | Glu | Arg | Phe | Thr | Val | Asp | |
| | 487 | | | | 580 | | | | | 585 | | | | | 590 | | | |
| | 489 | Lys | Asp | His | Leu | Val | Val | Ala | Asp | Val | Ser | Asp | Asp | Asp | Ser | Gly | Thr | |
| | 49Q | | | 5.95 | | | | | 600 | | | | | 605 | • | ٠. | | |
| | 492 | Tyr | `rhr | Cys | `Vai | Ala | Asn | Thr | Thr | Leu | Asp | Ser | Val | Ser | Aia | Ser | Άľa | |
| | 493 | | 610 | | | | | 615 | | | | | 620 | | | | | |
| | 495 | Val | Leu | Ser | Val | Val | Ala | Pro | Thr | Pro | Thr | Pro | Ala | Pro | Val | Tyr | Asp | |
| | 496 | | | | | | 630 | | | | | 635 | | | | | 640 | |
| | 498 | Val | Pro | Asn | Pro | Pro | Phe | Asp | Leu | Glu | Leu | Thr | Asp | Gln | Leu | Asp | Lys | |
| | 499 | | | | | 645 | | | | | 650 | | | | | 655 | | |
| | 501 | Ser | Val | Gln | Leu | Ser | Trp | Thr | Pro | Gly | Asp | Asp | Asn | Asn | Ser | Pro | Ile | |
| | 502 | | | | 660 | | | | | 665 | | | | | 670 | | | |
| | 504 | Thr | Lys | Phe | Ile | Ile | Glu | Tyr | Glu | Asp | Ala | Met | His | Lys | Pro | Gly | Leu | |
| | 505 | | | 675 | | | | | 680 | | | | | 685 | | | | |
| | 507 | Trp | His | His | Gln | Thr | Glu | Val | Ser | Gly | Thr | Gln | Thr | Thr | Ala | Gln | Leu | |
| | 508 | | 590 | | | | | 6.95 | : | | | | 700 | 2. | | :· · | | |
| | 510 | Lys | Leu | Ser | Pro | Tyr | Val | Asn | Tyr | Ser | Phe | Arg | Val | Met | Ala | Val" | Asn | |
| | 511 | 705 | | | | | 710 | | | | | 715 | | | | | 720 | |
| | 513 | Ser | Ile | Gly | Lys | Ser | Leu | Pro | Ser | Glu | Ala | Ser | Glu | Gln | Tyr | Leu | Thr | |
| | 514 | | | | | 725 | | | | | 730 | | | | | 735 | | |
| | 516 | Lys | Ala | Ser | Glu | Pro | Asp | Lys | Asn | Pro | Thr | Ala | Val | Glu | Gly | Leu | Gly | |
| | 517 | | | | 740 | | | | | 745 | | | | | 750 | | | |
| | 519 | Ser | Glu | Pro | Asp | Asn | Leu | Glu | Ile | Thr | Trp | Lys | Pro | Leu | Asn | Gly | Phe | |
| | 520 | | | 755 | | | | | 760 | | | | | 765 | | | | |
| | 522 | Glu | Ser | Asn | Gly | Pro | Gly | Leu | Gln | Tyr | Lys | Val | Ser | Trp | Arg | Gln | Lys | |
| | 523 | | 770 | | | | | 775 | | | | | 780 | | | | | |
| | 525 | Asp | Gly | Asp | Asp | Glu | \mathtt{Trp} | Thr | Ser | Val | Val | Val | Ala | Asn | Val | Ser | Lys | |
| | 526 | 785 | | | | | 790 | | | | ı | 795 | | | | | 800 | |
| | 528 | Tyr | Ile | Val | Ser | Gly | Thr | Pro | Thr | Phe | Val | Pro | Tyr | Leu | Ile | Lys | Val | |
| | 529 | | | | | 805 | | | | | 810 | | | | | 815 | | |
| | | Gln | Ala | Leu | Asn | Asp | Met | Gly | Phe | Ala | Pro | Glu | Pro | Ala | Val | Val | Met | |
| | 532 | | | | 820 | | | | | 825 | | | | | 830 | | | |
| | | Gly | His | Ser | Gly | Glu | Asp | Leu | Pro | Met | Val | Ala | Pro | Gly | Asn | Val | Arg | |
| | 535 | | | 835 | | | | | 840 | | | | | 845 | | | | |
| | 537 | Val | Asn | Val | Val | Asn | Ser | Thr | Leu | Ala | Glu | Val | His | Trp | Asp | Pro | Val | |
| | 538 | | 850 | | | | | 855 | | | | | 860 | | | | | |
| | 540 | Pro | Leu | Lys | Ser | Ile | Arg | Gly | His | Leu | Gln | Gly | Tyr | Arg | Ile | Tyr | Tyr | |
| | 541 | | | | | | 870 | | | | | 875 | | | | | 880 | |
| | 543 | ${\tt Trp}$ | Lys | Thr | Gln | Ser | Ser | Ser | Lys | Arg | | Arg | Arg | His | Ile | Glu | Lys | |
| | 544 | | | | | 885 | | | | | 890 | | | | | 895 | | |
| | 546 | Lys | Ile | Leu | Thr | Phe | Gln | Gly | Ser | Lys | Thr | His | Gly | Met | Leu | Pro | Gly | |
| | 547 | | | | 900 | | | | | 905 | | | | | 910 | | | |
| | 549 | Leu | Glu | Pro | Phe | Ser | His | Tyr | Thr | Leu | Asn | Val | Arg | Val | Val | Asn | Gly | |
| | 550 | | | 915 | | | | | 920 | | | | | 925 | | | | |
| | 552 | Lys | Gly | Glu | Gly | Pro | Ala | Ser | ${\tt Pro}$ | Asp | Arg | Val | Phe | Asn | Thr | Pro | Glu | |
| | 553 | | 930 | | | | | 935 | | | | | 940 | | | | | |
| i e | | | | | | | | | | | | | | | | | | |

RAW SEQUENCE LISTING DATE: 06/01/2006
PATENT APPLICATION: US/09/301,380A TIME: 12:11:12

Input Set: A:\20093A-21US-Substitute Sequence Listing.txt
Output Set: N:\CRF4\06012006\I301380A.raw

555 Gly Val Pro Ser Ala Pro Ser Ser Leu Lys Ile Val Asn Pro Thr Leu 556 945 950 955 558 Asp Ser Leu Thr Leu Glu Trp Asp Pro Pro Ser His Pro Asn Gly Ile 965 970 561 Leu Thr Glu Tyr Thr Leu Lys Tyr Gln Pro Ile Asn Ser Thr His Glu 980 985 564 Leu Gly Pro Leu Val Asp Leu Lys Ile Pro Ala Asn Lys Thr Arg Trp 565 995 1000 1005 567 Thr Leu Lys Asn Leu Asn Phe Ser Thr Arg Tyr Lys Phe Tyr Phe Tyr 568 1010 1015 1020 570 Ala Gln Thr Ser Ala Gly Ser Gly Ser Gln Ile Thr Glu Glu Ala Val E--> 571(025)/02\ 1030 1035 573 Thr Thr Val Asp Glu Ala Gly Ile Leu Pro Pro Asp Val Gly Ala Gly 1045 1050 576 Lys Val Gln Ala Val Asn Thr Arg Ile Ser Asn Leu Thr Ala Ala Ala 1060 1065 579 Ala Glu Thr Tyr Ala Asn Ile Ser Trp Glu Tyr Glu Gly Pro Glu His 580 1075 1080 1085 532 Val. Asn Phe. Tyr Val 🕬 📉 Tyr Gly Val Ala Gly Ser Lys Glu Glu Trp 🔥 😿 🍇 😁 1095 1100 585 Arg Lys Glu Ile Val Asn Gly Ser Arg Ser Phe Phe Gly Leu Lys Gly E--> 586 105)//05 1110 1115 588 Leu Met Pro Gly Thr Ala Tyr Lys Val Arg Val Gly Ala Val Gly Asp 1125 1130 591 Ser Gly Phe Val Ser Ser Glu Asp Val Phe Glu Thr Gly Pro Ala Met 592 1140 1145 1150 594 Ala Ser Arg Gln Val Asp Ile Ala Thr Gln Gly Trp Phe Ile Gly Leu 1160 597 Met Cys Ala Val Ala Leu Leu Ile Leu Ile Leu Leu Ile Val Cys Phe 1175 1170 1180 600 Ile Arq Arq Asn Lys Gly Gly Lys Tyr Pro Val Lys Glu Lys Glu Asp E--> 601(185) //85 1190 1195 603 Ala His Ala Asp Pro Glu Ile Gln Pro Met Lys Glu Asp Asp Gly Thr 1205 1210 606 Phe Gly Glu Tyr Ser Asp Ala Glu Asp His Lys Pro Leu Lys Lys Gly 1220 1225 609 Ser Arg Thr Pro Ser Asp Arg Thr Val Lys Lys Glu Asp Ser Asp Asp 610 1235 1240 1245 612 Ser Leu Val Asp Tyr Gly Glu Gly Val Asn Gly Gln Phe Asn Glu Asp 613 1250 1255 1260 615 Gly Ser Phe Ile Gly Gln Tyr Ser Gly Lys Lys Glu Lys Glu Pro Ala E--> 616(265)/265 1270 1275 618 Glu Gly Asn Glu Ser Ser Glu Ala Pro Ser Pro Val Asn Ala Met Asn 1285 1290

621 Ser Phe Val

VERIFICATION SUMMARY

DATE: 06/01/2006 TIME: 12:11:14 PATENT APPLICATION: US/09/301,380A

Input Set : A:\20093A-21US-Substitute Sequence Listing.txt

Output Set: N:\CRF4\06012006\I301380A.raw

L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date L:365 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:1 L:571 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2 L:586 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2 L:601 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2 L:616 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:2 I. 700 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8 after pos.:0